

Section 2 Executive Summary

Contents of this Section

- 2.1 Overview
- 2.2 Organization of the Plan Update
- 2.3 Hazards and Risks
- 2.4 Goals, Objectives, and Actions
- 2.5 Planning Process
- 2.6 Adoption and Approval
- 2.7 Implementation
- 2.8 Monitoring and Updating the Plan

2.1 Overview

On October 30, 2000, the President signed into law the Disaster Mitigation Act of 2000, also known as DMA 2000. Among its other features, DMA 2000 established a requirement that in order to remain eligible for federal disaster assistance and grant funds, local and state governments must develop and adopt hazard mitigation plans. On February 26, 2002, the Federal Emergency Management Agency (FEMA) published an Interim Final Rule (IFR) that set forth the guidance and regulations under which such plans are supposed to be developed. The IFR provides detailed descriptions of both the planning process that states and localities are required to observe and the contents of the plan that emerges. This City of Galveston Hazard Mitigation Plan (the Plan) responds to those requirements.

Hazard mitigation is often defined as actions taken to reduce the effects of natural hazards on a place and its population. The City of Galveston developed this Plan because of increasing awareness that natural hazards, especially flood and wind, have the potential to affect people, physical assets, and operations in the City.

There are four contacts for information related to this Plan. Contact information for the Plan is:

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Section 2: Executive Summary

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The purpose of a mitigation plan is to rationalize the process of determining appropriate hazard mitigation actions. The document includes a detailed characterization of natural hazards that can affect the City; a risk assessment that describes potential losses to physical assets, people, and operations; a set of goals, objectives, strategies, and actions that will guide the City mitigation activities; and a detailed plan for implementing and monitoring the Plan.

This Plan focuses on 14 city-wide hazards with the highest potential for damaging physical assets, people, and operations in Galveston. These hazards are:

- Biologic Event
- Coastal Erosion
- Coastal Retreat
- Coastal Subsidence
- Drought
- Environmental Disaster
- Extreme Wind
- Flooding
- Hazardous Materials Incident (Fixed Site and Transport)
- Lightning
- Sea Level Change
- Terrorism
- Tsunami
- Wildfire / Urban Fire

Both the risk assessment and mitigation action plan sections reflect this emphasis, which was the result of careful consideration by the City of Galveston Hazard Mitigation Plan Stakeholder Committee (HMPSC).

2.2 Organization of the Plan

The Plan is organized to parallel the structure provided in the IFR. The Plan has 10 sections.

Section 1	Table of Contents
Section 2	Executive Summary
Section 3	Context
Section 4	Adoption and Approval
Section 5	Planning Process
Section 6	Hazard Identification, Profiling and Ranking
Section 7	Risk Assessment
Section 8	Capability Assessment

Section 9	Mitigation Action Plan
Section 10	Plan Monitoring and Maintenance
Appendices	

There are references to the IFR throughout the Plan. Where possible, these provide specific section and subsection notations to aid the review process. The Plan also includes references to the FEMA crosswalk document, which is used in reviewing mitigation plans.

2.3 Hazards and Risks

2.3.1 Hazards

Sections 6 and 7 of this Plan include detailed descriptions of the process that was used to assess and prioritize the City's risks from natural hazards, quantitative risk assessments for the City as a whole, and more detailed assessments for certain asset classes. Twenty-eight hazards were initially identified by the HMPSC. These are:

Aircraft Incident	Biologic Event
Coastal Erosion	Coastal Retreat
Coastal Subsidence	Dam / Levee Failure
Drought	Earthquake
Environmental Disaster	Expansive Soils
Extreme Heat	Extreme Wind
Flooding	Hailstorm
Hazardous Materials Incident (Fixed Site and Transport)	Land Subsidence
Hurricane	Lightning
Landslide	Severe Winter Storm
Mosquito-Borne Disease / Communicable Disease / Pandemic	Thunderstorm / Windstorm
Sea Level Change	Tsunami
Terrorism	Wildfire / Urban Fire
Tornado	
Volcano	

After these initial 28 hazards were profiled, the HMPSC used an evaluation system with five criteria to reduce the range of hazards to those with the most potential to impact the City. The criteria are also discussed in detail in Section 6. The criteria included: (1) History, (2) Potential for mitigation, (3) Presence of susceptible areas, (4) Data availability, (5) Federal Disaster Declarations and local emergency declarations.

For each of the profiled hazards, the profiles in Section 6 include:

- Description
- Geographical Extent
- Severity
- Impact on Life and Property
- Occurrence (probability)

As a result of this evaluation, the HMPSC determined that 14 hazards present the greatest risk to the City and its residents; the hazards with the greatest risk identified are

- Biologic Event
- Coastal Erosion
- Coastal Retreat
- Coastal Subsidence
- Drought
- Environmental Disaster
- Extreme Wind
- Flooding
- Hazardous Materials Incident (Fixed Site and Transport)
- Lightning
- Sea Level Change
- Terrorism
- Tsunami
- Wildfire / Urban Fire

2.3.2 Risks

A risk calculation is a FEMA requirement. Risk is a numerical indication of potential future damages. Although a range of events from tsunami to hazardous materials incidents all have some potential to affect the City of Galveston, extreme wind and flooding are clearly the most significant City-wide hazards, based on the criteria and experience.

All hazards profiled received a qualitative risk assessment. After discussion and consideration, the Steering Committee determined that five of the profiled hazards posed significant enough risk to warrant a quantitative risk assessment. Also considered was the type and quality of data available for a qualitative risk assessment.

These five City-wide were selected for much more detailed assessments and estimations of future damages. The risk assessment found in Section 7 describes and analyzes the risks and vulnerabilities to the City from the hazards profiled in Section 6 Hazard Identification, Profiling, and Ranking. The assessment includes a vulnerability description and information as to the identified risk to public and private assets (where applicable).

The City of Galveston Hazard Mitigation Plan Stakeholder Committee (HMPSC) conducted a risk assessment exercise to determine the vulnerabilities to assets within the planning area. The exercise was conducted at an HMPSC meeting. The updated hazard profiles were used as the basis to determine the vulnerability of and risk to assets within the City.

Prioritizing the potential impacts of hazards on City assets was based on both a quantitative and a qualitative analysis of the identified hazards. This allowed the HMPSC to focus planning effort on the hazards most likely to cause future impacts to the community. The HMPSC used historical data, local knowledge and experience to rate the exposure, probability and impact of each of these hazards. Each hazard identified and profiled received a qualitative risk assessment. The anticipated impact of the hazards was then assigned a value of Low, Moderate or High. Table 2.3.2-1 describes the definitions assigned to these terms.

Table 2.3.2-1
Definitions of Risk Assessment Impact Terminology for Qualitative Risk Assessment

Definitions of Risk Assessment Impact Terminology for Qualitative Risk Assessment			
Term	Potential Impact to People (Life Safety/Livelihood)	Potential Impact to Buildings/Critical Facilities	Potential Impact to Infrastructure
Low	Some injuries possible but unlikely	Cosmetic damages to structures Loss of Function for less than 1 day	Some roads/bridges temporarily blocked Temporary power loss
Moderate	Injuries expected, some deaths possible	Some structural damages Loss of Function for 1-2 days	Road/bridge closures Power and utility loss
High	Several deaths expected	Some structures irreparably damaged Loss of Function for 3-5 days	Long-term road/bridge closures Long-term power and utility loss

These ratings were then used to determine the qualitative ranking of the hazards, the City's risk of exposure to the hazard, the probability of the hazard occurring and the potential impact of that hazard to the City.

Section 7 includes details about calculation methodologies and results of the City-wide risk assessment.

2.4 Goals, Objectives, and Actions

Section 9 of this Plan describes the City of Galveston's priorities for mitigation actions. The section divides the actions by priority, and describes the funding required, sources of funding, the level of support, and the timing of the action. The section also includes the City's hazard mitigation goals and objectives.

2.4.1 The City of Galveston's Hazard Mitigation Goals

Goals are general guidelines that explain what the City wants to achieve. Goals are expressed as broad policy statements representing desired long-term results. The City of Galveston's mitigation planning goals include:

Goal #1: Improve education and outreach efforts, specifically to the public, elected officials, municipal employees and local businesses, regarding the potential impacts of hazards and the identification of specific measures that can be taken to reduce those impacts.

Goal #2: Improve capabilities, coordination and opportunities at the municipal level to plan and implement hazard mitigation projects, programs and activities, especially through the use of GIS, coordination with universities and colleges, and public/private partnerships.

Goal #3: Develop hazard mitigation policies and programs designed to reduce the impact of natural and human caused hazards to people and property.

Goal #4: Identify and implement hazard mitigation projects to reduce the impact of hazard events and disasters.

Please refer to section 9.2 for more information on goals for the City of Galveston's Hazard Mitigation Plan.

2.4.2 Objectives

Objectives are well-defined intermediate points in the process of achieving goals. (*Objectives* are generally coterminous with *strategies*.) The City of Galveston's mitigation planning objectives include:

- Educate the public on actions they can take to prevent or reduce loss or life or property damage from all hazards.
- Acquire and maintain detailed data regarding vulnerabilities, including critical facilities and historic assets, so that these resources can be prioritized and assessed for mitigation actions.
- Seek ways to reduce losses to the National Flood Insurance Program.
- Consider measures to ensure that modifications to existing development, as well as any future development, will not put people or property in harm's way, or will not increase threats to existing properties.
- Pursue opportunities to mitigate identified Repetitive Loss and Severe Repetitive Loss properties
- Seek ways to increase participation in and compliance with the National Flood Insurance Program, and with the Community Rating System.

Please refer to section 9.2 for more information on objectives for the City of Galveston Hazard Mitigation Plan.

2.4.3 Actions

Action Items are the specific steps (projects, policies, and programs) that advance a given objective. They are highly focused, specific, and measurable. The City of Galveston's mitigation actions include, but are not limited to:

- Emergency Generators
- Retrofit/Hardening of Existing Critical Facilities
- Flood Control Infrastructure

- Safe Room
- Protection of Critical Systems for Mitigation
- Public Education
- Warning Systems

The above list is intended to be illustrative of the overall action items, rather than an exhaustive list. Please refer to section 9.3.3 for more information on municipality specific mitigation actions.

2.5 Planning Process

Section 5 provides details about the process that was used to develop this Plan. The process closely followed the guidance in the FEMA 386 series of planning guidance, which recommend a four-stage process for developing mitigation plans.

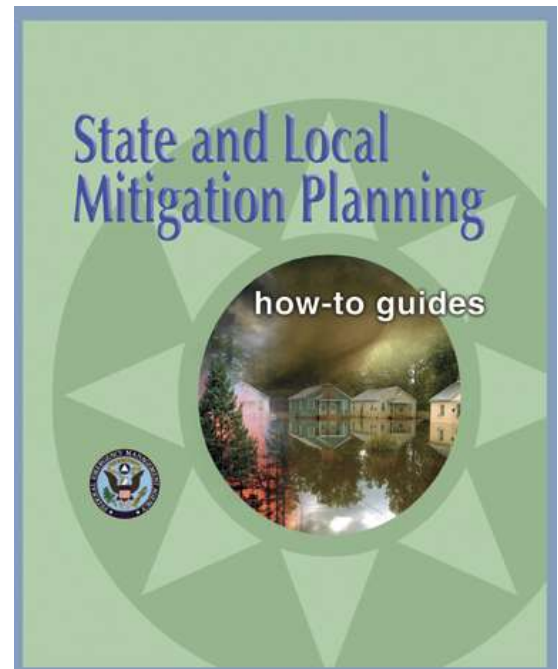
- Step 1 Organize resources
- Step 2 Assess risks
- Step 3 Develop a mitigation plan
- Step 4 Implement the plan and monitor progress

Step 1, organizing resources, is described in Section 5 (Planning Process). The section includes details about who was involved, the processes that were used to establish leadership and advisory groups, and public and other outreach and involvement efforts.

Step 2, the risk assessment, was completed by the HMPSC. The Risk Assessment is included as Section 7 of the Plan, and is preceded by a separate Hazard Identification, Profiling and Ranking discussion in Section 6.

Step 3, development of the Mitigation Plan is described in Section 5 (Planning Process) and Section 9 (Mitigation Action Plan). Section 5 includes details about who was involved, the processes that were used, and the products that were developed. Section 9 includes specific details about the identification and development of mitigation goals, objectives, and actions based upon Section 7 (Risk Assessment) and Section 8 (Capability Assessment).

Step 4, implementing the Plan, is described in the Mitigation Action Plan in Section 9, which includes details about who is responsible for implementation of specific strategies and actions; and in Section 10, the Plan Monitoring and Maintenance section, which describes long-term implementation through periodic updates and reviews.



2.6 Adoption and Approval

Note to TDEM and FEMA reviewers: the following dates will be filled in after these events take place.

The City of Galveston's Emergency Management Coordinator and Director of Planning and Community Development, with the endorsement of the HMPSC, was responsible for recommending plan approval to City of Galveston City Council. Consistent with that recommendation, the Galveston City Council approved this Hazard Mitigation Plan on [Insert DATE]. Following adoption, the Plan was submitted to FEMA Region VI. FEMA reviewed and approved the Plan on [Insert DATE].

2.7 Implementation

The implementation process is described as part of the specific actions in the Mitigation Action Plan in Section 9.

2.8 Monitoring and Updating the Plan

Section 10 (Plan Monitoring and Maintenance) describes the schedule and procedures for ensuring that the Plan stays current. The section identifies when the Plan must be updated, who is responsible for monitoring the Plan, and ensuring that the update procedures are implemented. This section provides a combination of cyclical dates (oriented toward FEMA requirements) and triggering events that will initiate amendments and updates to the Plan. The City of Galveston's Emergency Management Coordinator and Planning and Community Development Department are responsible for monitoring the Plan and initiating the cyclical update process. For contact information regarding this Plan, please see part 2.1 of this section.

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